110TH CONGRESS
1ST SESSION

# S. 1138

To enhance nuclear safeguards and to provide assurances of nuclear fuel supply to countries that forgo certain fuel cycle activities.

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IN THE SENATE OF THE UNITED STATES

APRIL 18, 2007

Mr. LUGAR (for himself and Mr. BAYH) introduced the following bill; which was read twice and referred to the Committee on Foreign Relations

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# A BILL

To enhance nuclear safeguards and to provide assurances of nuclear fuel supply to countries that forgo certain fuel cycle activities.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,*

**SECTION 1. SHORT TITLE.**

This Act may be cited as the ''Nuclear Safeguards and Supply Act of 2007''.

**SEC. 2. TABLE OF CONTENTS.**



★(Star Print)

**SEC. 3. APPROPRIATE CONGRESSIONAL COMMITTEES DEFINED.**

In this Act, the term ''appropriate congressional committees'' means the Committee on Foreign Relations of the Senate and the Committee on Foreign Affairs of the House of Representatives.

# TITLE I—NUCLEAR SAFEGUARDS AND NUCLEAR FUEL SUPPLY

**SEC. 101. FINDINGS.**

Congress makes the following findings:

(1) The Treaty on the Non-Proliferation of Nuclear Weapons, done at Washington, London, and Moscow July 1, 1968, and entered into force March 5, 1970 (commonly known as the ''Nuclear Non-Proliferation Treaty'' or ''NPT'') and the safeguards system of the International Atomic Energy Agency (IAEA) are indispensable to international peace and security.

(2) Congress has long supported efforts aimed at effective and efficient assurances of nuclear fuel supply, the strengthening of IAEA safeguards, and

assistance to the developing world for nuclear and non-nuclear energy sources, as embodied in the Nuclear Non-Proliferation Act of 1978 (22 U.S.C. 3201 et seq.).

(3) The February 22, 2005, Report of the IAEA Experts Group on Multilateral Approaches to the Nuclear Fuel Cycle found that, in addition to increased verification activities in various nations such as Iran, another factor contributing to significant and troubling demands on the IAEA safeguards system was that ''the civilian nuclear industry appears to be poised for worldwide expansion'' and that ''[r]apidly growing global demand for electricity, the uncertainty of supply and price of natural gas, soaring prices for oil, concerns about air pollution and the immense challenge of lowering greenhouse gas emissions, are all forcing a fresh look at nuclear power. As the technical and organizational foundations of nuclear safety improve, there is increasing confidence in the safety of nuclear power plants. In light of existing, new and reawakened interest in many regions of the world, the prospect of new nuclear power stations on a large scale is therefore real. A greater number of States will consider developing their own fuel cycle facilities and nuclear

know-how, and will seek assurances of supply in materials, services and technologies.''.

(4) The same report also found, ''Two primary deciding factors dominate all assessments of multilateral nuclear approaches namely 'Assurance of non-proliferation' and 'Assurance of supply and services.' Both are recognised overall objectives for governments and for the NPT community. In practice, each of these two objectives can seldom be achieved fully on its own. History has shown that it is even more difficult to find an optimum arrangement that will satisfy both objectives at the same time. As a matter of fact, multilateral approaches could be a way to satisfy both objectives.''.

(5) The same report also found, ''The non-proliferation value of a multilateral arrangement is measured by the various proliferation risks associated with a nuclear facility, whether national or multilateral. These risks include the diversion of materials from [a multilateral nuclear approach or MNA] (reduced through the presence of a multinational team), the theft of fissile materials, the diffusion of proscribed or sensitive technologies from MNAs to unauthorised entities, the development of clandestine parallel programmes and the breakout scenario. The

latter refers to the case of the host country 'breaking out', for example, by expelling multinational staff, withdrawing from the NPT (and thereby terminating its safeguards agreement), and operating the multilateral facility without international control.''.

(6) The 2004 Report of the United Nations Secretary-General's High-Level Panel on Threats, Challenges and Change found that creating incentives for countries to forego the development of domestic uranium enrichment and reprocessing facilities is essential, and that such suggestions, if implemented swiftly and firmly, offer a real chance to reduce the risk of a nuclear attack, whether by states or non-state actors, and that such proposals ''should be put into effect without delay''.

(7) On February 11, 2004, President George W. Bush stated, ''The world's leading nuclear exporters should ensure that states have reliable access at reasonable cost to fuel for civilian reactors, so long as those states renounce enrichment and reprocessing. Enrichment and reprocessing are not necessary for nations seeking to harness nuclear energy for peaceful purposes.''.

(8) According to some experts, global energy demand will grow by 50 percent in the next 20 years, predominantly in the developing world.

(9) Nuclear power may play an increasing role in electricity supply to both the developed and the developing world over the next several decades.

(10) The Government Accountability Office (GAO) stated in testimony before Congress in September 2006 that a significant factor limiting the effectiveness of the current IAEA safeguards system is that ''more than half, or 111 out of 189, of the NPT signatories have not yet brought the Additional Protocol into force, including the United States''.

(11) The GAO also testified that an additional ''weakness in implementing strengthened safeguards is that safeguards are significantly limited or not applied in about 60 percent, or 112 out of 189, of the NPT signatory countries—either because they have an agreement (known as a small quantities protocol) with IAEA, and are not subject to most safeguards measures, or because they have not concluded a comprehensive safeguards agreement with IAEA''.

(12) The GAO also testified that ''while IAEA is increasingly relying on the analytical skills of its staff to detect countries' undeclared nuclear activi-

ties, the agency is facing a looming human capital crisis. In the next 5 years, IAEA will experience a large turnover of senior safeguards inspectors and high-level management officials. Delays in filling critical safeguards positions limit IAEA's ability to implement strengthened safeguards.''.

(13) Outdated and unnecessary staff restrictions have prevented the IAEA from maintaining and equipping a well-trained cadre of professional staff at the IAEA's Safeguards Analytical Laboratory (SAL), located at Seibersdorf, Austria.

(14) A goal of the Department of State's budget request for fiscal year 2007 for United States voluntary contributions to the IAEA was ''[s]trengthening quality control and sensitivity of analyses by the Safeguards Analytical Laboratory (SAL) and the Network of Analytical Laboratories, and reviewing needs for possible refurbishment or replacement of SAL''.

(15) Considerable investment is needed for SAL to meet future IAEA requirements as its workload is growing, the laboratory's infrastructure is aging, and IAEA requirements have become more demanding, and while initial plans have been made for laboratory enhancement and are currently pending

budgetary approval (sometime in 2009), the simple fact is that, as more countries implement IAEA safeguards, many more nuclear samples come to SAL for analysis.

(16) Any proposals for the creation of bilateral or multilateral assurances of supply mechanisms must take into account, and be achieved in a manner that minimizes, the risk of nuclear proliferation or regional arms races and maximizes adherence to international nonproliferation regimes, including, in particular, the Guidelines of the Nuclear Suppliers Group (NSG), and the IAEA Additional Protocol.

(17) Any proposal to create an assurance of supply mechanism in or with a certain country or group of countries should not result in decreased emphasis on existing nuclear safeguards verification efforts and compliance challenges.

(18) The existing funding, planning, and execution of IAEA safeguards is not sufficient to meet the predicted growth in the future of civilian nuclear power, and therefore any growth in civilian nuclear power must be evaluated against the challenges it poses to verification of the assurances of peace and security provided by the IAEA safeguards system.

(19) The existing IAEA safeguards system, and the Additional Protocol and the Guidelines of the NSG, represent the current, minimum standards for controlling access to and trade in civilian nuclear technology and should continue to be improved, expanded, and strengthened.

**SEC. 102. DECLARATION OF POLICY.**

(a) CONTINUATION OF EXISTING POLICY.—It shall remain the policy of the United States—

(1) to create mechanisms to provide adequate supplies of nuclear fuel consistent with the provisions of the Nuclear Non-Proliferation Act of 1978 (22 U.S.C. 3201 et seq.), in particular title I of such Act (22 U.S.C. 3221 et seq.);

(2) to strengthen the IAEA safeguards system consistent with the provisions of the Nuclear Non-Proliferation Act of 1978 (22 U.S.C. 3201 et seq.), in particular title II of such Act (22 U.S.C. 3241 et seq.); and

(3) to cooperate with other nations, international institutions, and private organizations to assist in the development of non-nuclear energy resources under title V of the Nuclear Non-Proliferation Act of 1978 (22 U.S.C. 3261 et seq.).

(b) DECLARATION OF NEW POLICY.—It shall be the policy of the United States to discourage the development of enrichment and reprocessing capabilities in additional countries, encourage the creation of bilateral and multilateral assurances of nuclear fuel supply, and ensure that all supply mechanisms operate in strict accordance with the IAEA safeguards system and do not result in any additional unmet verification burdens for the system.

**SEC. 103. SAFEGUARDS ANALYTICAL LABORATORY.**

(a) AUTHORIZATION OF APPROPRIATIONS.—In addition to the amount requested by the President for United States Voluntary Contributions to the IAEA for Fiscal Year 2008, an additional $10,000,000 is authorized to be appropriated under this Act for the refurbishment or possible replacement of the IAEA Safeguards Analytical Laboratory.

(b) REPORT.—Not later than 180 days after the date of the enactment of this Act, the Secretary of State shall submit to the appropriate congressional committees a report on the refurbishment or possible replacement of the IAEA Safeguards Analytical Laboratory pursuant to subsection (a).

**SEC. 104. SAFEGUARDS TECHNOLOGY DEVELOPMENT PROGRAM.**

The Secretary of State is authorized, in cooperation with the Secretary of Energy and the Directors of the National Laboratories and in consultation with the Secretary of Defense and the Director of National Intelligence, to pursue a program—

(1) to strengthen technical safeguards research and development;

(2) to increase resources, identify near-term technology goals, formulate a technology roadmap, and improve interagency coordination on safeguards technology; and

(3) to examine proliferation resistance in design and development of all future nuclear energy systems.

# TITLE II—NUCLEAR FUEL SUPPLY

**SEC. 201. AUTHORITY FOR BILATERAL AND MULTILATERAL NUCLEAR FUEL SUPPLY MECHANISMS.**

(a) IN GENERAL.—The President is authorized to create, consistent with title I of the Nuclear Non-Proliferation Act of 1978 (22 U.S.C. 3221 et seq.), and other applicable provisions of law, bilateral and multilateral mechanisms to provide a reliable supply of nuclear fuel to those countries and groups of countries that adhere to

policies designed to prevent the proliferation of nuclear weapons and that decide to forgo a national uranium enrichment program and spent nuclear fuel reprocessing facilities.

(b) PURPOSE OF MECHANISMS.—The mechanisms authorized under subsection (a) shall, to the maximum extent practicable, take into account the following:

(1) The economic rationale for a country or countries pursuing nuclear power, including existing sources of power for such country or countries.

(2) Whether such country or countries are in compliance with their obligations under applicable safeguards agreements and additional protocols with the IAEA.

(3) Whether or not the development in such country or countries of the complete nuclear fuel cycle would impose new, costly IAEA safeguards measures that cannot be supported by current IAEA safeguards implementation in such country or countries, such that there is a reasonable assurance that all nuclear materials in such country or countries are for peaceful purposes and that there are no undeclared nuclear materials or activities in such country or countries.

(4) An evaluation of the proliferation dangers of such country or countries developing nuclear fuel cycle facilities for the production and disposition of source and special nuclear materials.

(5) Whether or not the country or countries that would be recipients of nuclear fuel or other assistance provided by the United States are or have ever been designated as state sponsors of terrorism pursuant to section 620A of the Foreign Assistance Act of 1961 (22 U.S.C. 2371), section 40 of the Arms Export Control Act (22 U.S.C. 2780), or section 6(j) of the Export Administration Act (50 U.S.C. App. 2405(j)).

(6) If done under a bilateral supply mechanism, whether IAEA safeguards are being applied or will be applied to any facility, site, or location where international nuclear fuel supply activities are to be carried out.

(7) Whether, in the case of a multilateral supply mechanism, procedures are in place to ensure that when United States funds are used or when United States nuclear materials are to be used, exported, or reexported, all applicable provisions of United States law are followed.

(8) Whether the recipient country or countries of any fuel provided under this Act are or will become a party, prior to the commencement of any nuclear fuel supply under this Act, to—

(A) the Nuclear Non-Proliferation Treaty;

(B) in the case of a non-nuclear-weapon State Party to the Nuclear Non-Proliferation Treaty, a comprehensive safeguards agreement that is in force, pursuant to which the IAEA has the right and obligation to ensure that safeguards are applied, in accordance with the terms of the agreement, on all source or special fissionable material in all peaceful nuclear activities within the territory of such country, under its jurisdiction, or carried out under its control anywhere, for the exclusive purpose of verifying that such material is not diverted to nuclear weapons or other nuclear explosive devices;

(C) an additional protocol;

(D) the Convention on Nuclear Safety, done at Vienna September 20, 1994, and entered into force October 24, 1996;

(E) the Convention on Physical Protection of Nuclear Materials, done at Vienna October

26, 1979, and entered into force February 8, 1987; and

(F) the Convention on Supplementary Compensation for Nuclear Damage, done at Vienna September 12, 1997.

(9) The extent to which the recipient country or countries have or will have prior to the commencement of any nuclear fuel supply under this Act effective and enforceable export controls regarding nuclear and dual-use nuclear technology and other sensitive materials comparable to those maintained by the United States.

(10) The conformity of the safety and regulatory regimes in the recipient country or countries regarding the nuclear power sector with similar United States laws and regulations.

(11) The history of safety or environmental problems associated with any nuclear site, facility, or location in the recipient country or countries in the past, and the potential for future safety or environmental problems or issues in connection with the civilian nuclear power development plan of the country or countries.

(12) Whether the recipient country or countries have resident within them any persons or entities in-

volved in the illicit trafficking of nuclear weapons, nuclear materials, or dual-use nuclear technology.

(13) Whether the recipient country or countries have or will have sufficiently open and transparent civilian power markets such that United States firms may benefit from any such bilateral or multilateral supply mechanisms.

(c) RULE OF CONSTRUCTION.—Nothing in this Act shall be construed to provide any authority with respect to bilateral cooperation with another country or countries or any international organization or organizations in atomic energy that is additional to the authority provided under the Atomic Energy Act of 1954 (42 U.S.C. 2011 et seq.) and all other applicable laws and regulations in effect on the date of the enactment of this Act.

**SEC. 202. REPORT ON THE ESTABLISHMENT OF AN INTERNATIONAL FUEL AUTHORITY.**

(a) REPORT REQUIRED.—Not later than 180 days after the date of enactment of this Act, the President shall submit to the appropriate congressional committees a report detailing the feasibility of establishing an International Nuclear Fuel Authority (INFA) as called for in section 104 (a)(1) of the Nuclear Non-Proliferation Act of 1978 (22 U.S.C. 3223(a)(1)).

(b) CONTENT.—Without regard to any previous reports submitted under section 104 (a)(1) of the Nuclear Non-Proliferation Act of 1978 (22 U.S.C. 3223), the report required under subsection (a) shall evaluate, with respect to the feasibility of the establishment of the International Nuclear Fuel Authority, the following:

(1) United States laws and regulations that could be affected by the establishment of an INFA.

(2) What the cost to the United States Government could be of establishing an INFA.

(3) Potential locations for the INFA.

(4) The potential for creating a fuel supply bank under the control of the INFA.

(5) Nuclear materials that should be placed within the control of the INFA, including which nuclear activities should be carried out by the INFA for the production of nuclear fuel or for use as fuel.

(6) Whether the INFA should provide nuclear fuel services to recipient countries.

(7) Whether a multilateral supply mechanism, such as the INFA, is, in the judgment of the President, superior to bilateral mechanism for nuclear fuel supply.

(8) How such an international organization should operate to preserve freedom of markets in

nuclear fuel and avoid undue interference in the efficient operation of the international nuclear fuel market.

(9) The degree and extent to which such a multilateral supply mechanism should be under the control of, or a subordinate organization within, the IAEA, including whether establishing such an INFA would be superior or preferable to allowing the IAEA, pursuant to Article IX of the Statute of the IAEA, to become an international broker of nuclear fuel and nuclear fuel services, including with respect to an examination of the costs to IAEA Member States of effectively carrying out clauses (1) through (4) of paragraph (H) of such Article.

(10) The likely receptivity of the major countries involved in the supply of nuclear fuel and nuclear services to the creation of a multilateral supply mechanism such as the INFA or one under the IAEA.

**SEC. 203. SENSE OF THE SENATE ON IAEA FUEL SUPPLY.**

It is the sense of the Senate that—

(1) consistent with the long-standing support provided by Congress for the nuclear verification and technical cooperation projects of the IAEA, and with a view toward effective verification of safeguards and

a desire to ensure that the expansion of nuclear power remains only for peaceful purposes, the United States should support, either in annual voluntary and off-budget contributions to the IAEA, or in the provision of nuclear fuel to the IAEA, a nuclear fuel bank within the IAEA;

(2) the Senate commends the President for the September 26, 2005, announcement at the 49th Session of the General Conference of the IAEA that the United States will reserve up to 17 metric tons of highly enriched uranium for an IAEA verifiable assured supply arrangement;

(3) the Senate commends the efforts of the Nuclear Threat Initiative (NTI) to contribute $50,000,000 to the IAEA to help create a low enriched uranium stockpile owned and managed by the IAEA; and

(4) a combination of public and private efforts, including the provisions of law previously enacted in the Nuclear Non-Proliferation Act of 1978 (22 U.S.C. 3201 et seq.) and other applicable laws, initiatives supported by the President, efforts provided for by private groups, and the recommendations of many relevant studies, such as those cited in section 101, will be necessary to effectively and flexibly

manage the growth of civilian nuclear power in a manner that does not result in undue burdens on the IAEA safeguards system.

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